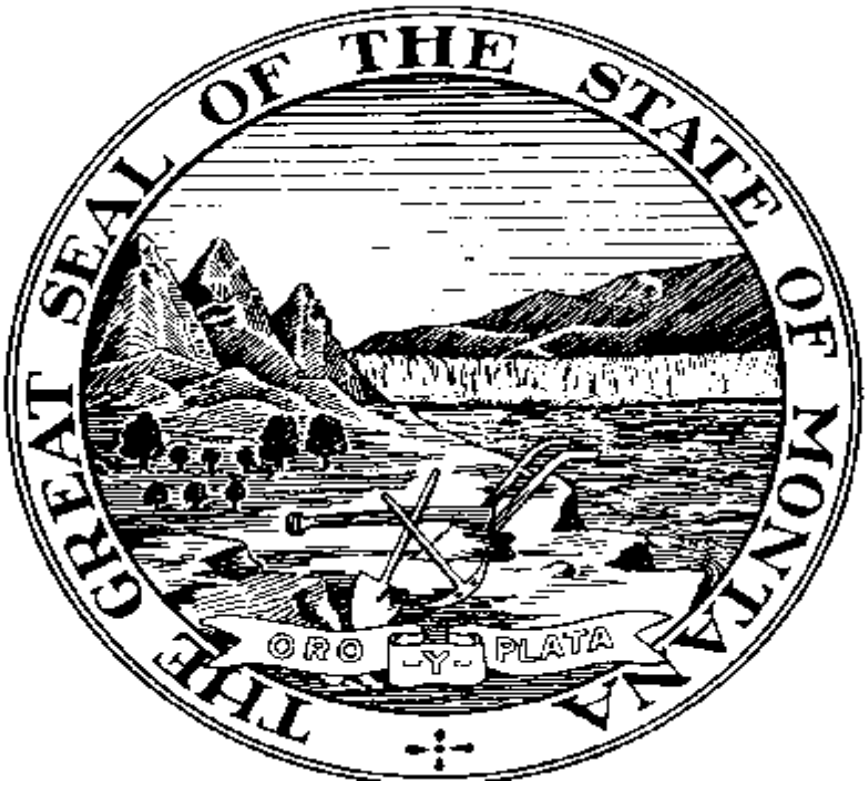
Natural Rubber Latex Allergy
Workplace Prevention

Occupational Safety & Health Bureau



Montana Department of Labor & Industry

Prepared for Montana Employers
by the

Occupational Safety & Health Bureau
Department of Labor and Industry
P.O. Box 1728
Helena, Montana 59624-1728
(406) 444-6401

Natural Rubber Latex Allergy: Workplace Prevention

Introduction

Natural rubber latex (NRL) has provided effective protection against the transmission of many infectious diseases to health care workers. For some workers, exposures to latex may result in allergic reactions. Workers exposed to latex gloves and other products containing NRL may develop allergic reactions such as rashes; hives; nasal, eye, or sinus symptoms; asthma; and (rarely) shock.

Workers in the health care industries (physicians, nurses, dentists, and technicians), are at risk for developing latex allergy because they use NRL gloves frequently. Also at risk are workers with less frequent glove use including hairdressers, housekeepers, and food service workers and workers in industries that manufacture latex products.

With the increased awareness of HIV, hepatitis B, and other infectious bloodborne pathogens, the use of barrier protection such as latex gloves has increased. With the increased use of latex gloves came an increase in latex allergies.

This booklet provides information about the latex allergy, common materials that contain NRL, and methods and guidelines that can be used in prevention. Listed at the end of the booklet are resources that can be used to gather more information on latex allergy prevention.

I. Background

A. Composition of Latex

Latex products are primarily manufactured from a milky fluid derived from the rubber tree, Hevea brasiliensis. Several chemicals are added to this fluid during the processing and manufacture of commercial latex. Some proteins in latex can cause a range of mild to severe allergic reactions. Some studies have indicated that corn starch powder, added to gloves to facilitate donning and removal, can serve as a carrier for the allergenic proteins from the NRL. Several types of synthetic rubber are also referred to as Alatex≅, but these do not release the proteins that cause allergic reactions.

B. Products Containing Latex

There are many products in use that contain latex, these products include: medical supplies, personal protective equipment, and many household objects. The following are examples of a few products that may contain latex:

1. Emergency Equipment
- Disposable gloves
- Blood pressure cuffs
- Oral and nasal airways
- Syringes

2. Personal Protective Equipment
- Gloves
- Surgical Masks

! Goggles
! Respirators
! Rubber aprons

3. Medical Supplies
! Catheters
! Anesthesia masks
! Wound drains
! Dental dams

4. Household Objects
! Carpeting
! Tool handles
! Balloons
! Automobile tires
! Condoms
! Diaphragms
! Baby bottle nipples
! Dishwashing gloves
! Bicycle hand grips

C. Allergic Reactions to Latex

There are three types of reactions that can occur in persons using latex products: irritant contact dermatitis, allergic contact dermatitis, and latex allergy.

Irritant contact dermatitis is the most common reaction to latex products. This reaction is the development of dry, itchy, irritated areas on the skin, usually on the hands. Usually caused by skin irritation from using gloves, powder, soaps, and incomplete hand washing.

Irritant contact dermatitis can be prevented by avoiding irritant products, the use of cotton glove liners, and alternative glove / products.

Chemical sensitivity dermatitis results from exposure to chemicals added to latex during processing or manufacturing. These chemicals can cause skin reactions similar to those caused by poison ivy, rash usually begins 24 to 48 hours after contact and may progress to oozing skin blisters.

Obtain medical diagnosis to identify the chemicals that are causing the reaction and use alternative glove material without that chemical.

Latex allergy can be a more serious reaction to latex than irritant contact dermatitis or allergic contact dermatitis. Certain proteins in latex may cause sensitization (positive blood or skin test, with or without symptoms). Although the amount of exposure needed to cause sensitization or symptoms is not known, exposures at even very low levels can trigger allergic reactions in some sensitized individuals.

Reactions usually begin within minutes of exposure to latex, but they can occur hours later and can produce various symptoms. Mild reactions to latex involve skin redness, hives, or itching. More severe reactions will may involve respiratory symptoms such as runny nose, sneezing, itchy eyes, soar throat, difficulty breathing, coughing spells, and wheezing. Symptoms can progress into anaphylactic shock if

medical treatment is not obtained.

D. Routes of Exposure

The proteins responsible for latex allergies have been shown to fasten to powder that is used on some latex gloves. When powdered gloves are worn, more latex protein reaches the skin. Also, when gloves are changed, latex protein/powder particles get into the air, where they can be inhaled into the lungs. Wearing latex gloves when a workers has hand dermatitis may increase the risk of developing latex allergy.

II. Prevention and Treatment

A. Diagnosing Latex Allergy

Latex allergy should be suspected in anyone who develops certain symptoms after latex exposure, including nasal, eye, or sinus irritation; hives; shortness of breath; coughing; wheezing; or unexplained shock. Any exposed worker who experiences these symptoms should be evaluated by a physician, since further exposure could result in a serious allergic reaction. A diagnosis is made by using the results of a medical history, physical examination, and tests.

B. Treatment of Latex Allergy

Once a worker becomes allergic to latex, special precautions are needed to prevent exposures during work as well as during medical or dental care. Certain medications may reduce the allergy symptoms, but complete latex avoidance, though quite difficult, is the most effective approach.

C. Prevention

It is of primary importance that barrier protection be used when hands would otherwise contact infectious materials or hazardous chemicals. The Occupational Safety and Health Administration=s (OSHA) bloodborne pathogens standard requires that gloves be worn when it is reasonably anticipated that hand contact may occur with blood or other potentially infectious materials (29 CFR 1910.1030).

Primary prevention involves reducing potential development of allergy by reducing unnecessary exposure to latex proteins for all workers. For example, food service workers or gardeners do not need to use NRL gloves for food handling or gardening. Gloves made of synthetic latex have been cleared for marketing as medical gloves by the Food and Drug Administration (FDA) and can be used effectively for barrier protection against bloodborne pathogens.

Some general guidelines for reducing NRL exposure are listed below:

! Use non-latex gloves for activities that are not likely to involve contact with infectious materials.

! Use powder-free latex gloves with reduced protein content.

! When wearing latex gloves, do not use oil-based hand creams or lotions (which can cause glove deterioration).

! After removing latex gloves, wash hands with a mild soap and dry thoroughly.

- Practice good housekeeping: frequently clean areas and equipment contaminated with latex-containing dust with vacuum filters.

- Provide workers with education programs and training materials about latex allergy.

- Use FDA and Health Industry Manufacturers Association (HIMA) approved synthetic latex gloves whenever possible.

- Periodically screen high-risk workers for latex allergy symptoms. Detecting symptoms early and removing symptomatic workers from latex exposure are essential for preventing long-term health effects.

- Evaluate current prevention strategies whenever a worker is diagnosed with latex allergy.

III. Additional Resources

Additional information can be attained from the following sites:

1. U.S. Department of Labor, **Occupational Safety & Health Administration**, Public Affairs Office-Room 3647, 200 Constitution Ave., Ashington, D.C. 20210.
Phone: 1-202-693-1999.
www.osha.gov

2. **National Institute for Occupational Safety and Health**. Department of Health and Human Services, 200 Independence Ave. SW 317B, Washington, DC 20201.
Phone: 1-800-356-4674, 1-800-35-NIOSH
www.niosh.gov

3. **American Conference of Governmental Industrial Hygienists (ACGIH)**. 1330 Kemper Meadow Drive, Cincinnati, OH 45240-1634.
Phone: 1-513-742-2020, Fax: 1-513-742-3355
www.acgih.org

Commercial safety catalogs and web sites.

4. Lab Safety Supply Inc., P.O. Box 1368, Janesville, WI 53547-1368.
Phone: 1-800-356-2501, Fax: 1-800-393-2287
www.labsafety.com

5. J.J. Keller & Associates, Inc., 3003 W. Breezewood Lane, P.O. Box 368, Neenah, WI 54957-0368
Free safety catalog available.
Phone: 1-800-531-8899, Fax: 1-800-727-7547
www.jjkeller.com

6. Conney Safety Products, 3202 Latham Drive, P. O. Box 44190, Madison, WI 53744-4190
Free safety catalog available
Phone: 1-800-356-9100 Fax: 1-800-845-9095
www.conney.com

7. Latex Allergy Information Service (LAIS), 176 Roosevelt Avenue, Torrington, CT, 06790
Phone: 1-860-482-6869 Fax: 1-(860) 482-7640
E-mail: 76500.1452@compuServe or debia@ix.netcom.com

8. CETRA Latex-Free Supplies,
Phone: 1-888-Latex No
www.latexfree.com